

What Is Claimed Is:

1. A method of determining an adjusted traction force for a patient on a therapeutic apparatus comprising the steps of:
  - positioning a first body supporting portion in a non-horizontal  
5 configuration;
  - determining compensating forces related to a weight of the first body supporting portion, a weight of an applicable portion of a patient's body, and an angle between the first body supporting portion and horizontal;
  - applying the compensating force to a desired traction force to  
10 determine the adjusted traction force; and
  - applying the adjusted traction force to the patient by moving the first body supporting portion relative to a second body supporting portion along a longitudinal axis.
- 15 2. The method of claim 1 wherein the step of positioning the first body supporting portion comprises moving the first body supporting portion relative to the second body portion through at least one rotational degree of freedom.
3. The method of claim 1 comprising the steps of:
  - 20 positioning the second body supporting portion in a non-horizontal configuration; and
  - determining second compensating forces related to a weight of an applicable portion of a patient's body, and an angle between the second body supporting portion and a horizontal plane.
- 25 4. The method of claim 3 comprising the steps of:
  - applying the second compensating force to a desired traction force to determine the adjusted traction force; and

applying the adjusted traction force to the patient by moving the first body supporting portion relative to a second body supporting portion along a longitudinal axis.

5                    5.        The method of claim 1 comprising the steps of:  
                         generating a signal corresponding to the weight of an applicable  
portion of a patient's body; and  
                         transmitting that signal to a processor.

10                   6.        The method of claim 1 comprising the steps of:  
                         generating a signal corresponding to the angle between the first body  
supporting portion and the horizontal plane; and  
                         transmitting that signal to a processor.

15                   7.        The method of claim 1 comprising the steps of:  
                         generating a signal corresponding to the weight of an applicable  
portion of a patient's body;  
                         generating a signal corresponding to the angle between the first body  
supporting portion and the horizontal plane;  
20                   transmitting the signals to a processor;  
                         entering into the processor the portion of the patient's body supported  
by the first body supporting portion; and  
                         determining an adjusted traction force.

25                   8.        The method of claim 7 wherein the processor applies the  
adjusted traction force to the patient.

9. The method of claim 1 wherein the compensating force is subtracted from the desired traction force when the first body supporting portion is positioned below horizontal.

5 10. The method of claim 1 wherein the compensating force is added from the desired traction force when the first body supporting portion is positioned above horizontal.

10 11. A therapeutic apparatus for applying a traction force to a patient comprising:  
a first body supporting portion and a second body supporting portion;  
an actuator adapted to move the first body supporting portion relative to the second body supporting portion along a longitudinal axis to apply the traction force;  
15 a linking mechanism adapted to position the first body supporting portion in a non-horizontal configuration;  
a securing system adapted to secure a patient to the first and second body supporting portions, the first body supporting portion supporting a portion of the patient's weight;  
20 a processor programmed to receive the weight of the portion of the patient's body supported by the first body supporting portion and an angle between the first body supporting portion and horizontal, the processor being programmed to determine an adjusted traction force.

25 12. The therapeutic apparatus of claim 11 wherein the processor comprises a data entry device.

13. The therapeutic apparatus of claim 11 comprising a weight measuring device adapted to generate a signal corresponding to the weight of the patient's body supported by the first body supporting portion.

5                    14. The therapeutic apparatus of claim 13 wherein the signal is transmitted to the processor.

15                    15. The therapeutic apparatus of claim 11 wherein the processor is programmed to receive the total weight of the patient and the identity of the portion  
10 of the patient's body supported by the first body supporting portion.

16. The therapeutic apparatus of claim 15 comprising a look-up table including body mass distribution.

15                    17. The therapeutic apparatus of claim 11 comprising an angle measuring device adapted to generate a signal corresponding to the angle between  
the first body supporting portion and horizontal.

18. The therapeutic apparatus of claim 17 wherein the signal is  
20 transmitted to the processor.

19. The therapeutic apparatus of claim 11 comprising an output device adapted to communicate the adjusted traction force to an operator.

25                    20. The therapeutic apparatus of claim 11 wherein the processor controls activation of the actuator to apply the adjusted traction force.

21. The therapeutic apparatus of claim 11 wherein the adjusted traction force is based on the angle of the first body supporting portion and the

weight of the first body supporting portion and the weight of the portion of the patient supported thereon.

22. The therapeutic apparatus of claim 11 wherein the processor  
5 comprises a look up table including the weight of the first and second body supporting portions.

23. A therapeutic apparatus for a patient comprising:  
a support frame including a first body supporting portion and a second  
10 body supporting portion, the first body supporting portion moveable relative to the second body supporting portion along a longitudinal axis;  
a securing system adapted to secure a patient to the first and second body supporting portions;  
a weight measuring device adapted to generate a signal corresponding  
15 to the weight of an applicable portion of a patient's body;  
an angle measuring device adapted to generate a signal corresponding to the angle between the first body supporting portion and horizontal; and  
an input device adapted to enter into a processor the portion of the patient's body supported by the first body supporting portion, the processor  
20 programmed to determine an adjusted traction force.

24. The therapeutic traction device of claim 23 wherein the processor is programmed to apply the adjusted traction force to the patient by moving the first body supporting portion relative to the second body supporting  
25 portion along the longitudinal axis to affect the distance between the first body supporting portion and the second body supporting portion.